AMENDMENTS TO THE CLAIMS:

1-4. (Cancelled)

5. (Previously Amended) A signal distribution network comprising:

a filter located at the point of entry of a building tuned to reflect network signals originating in the building back into the building;

at least one signal splitter, the signal splitter having a common port and a plurality of tap ports, the common port of the signal splitter being coupled to the filter; and

a plurality of terminal devices, each terminal device being coupled to a tap port of at least one signal splitter, at least one of the terminal devices providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high;

wherein the reflections from the filter provide a path for terminal devices back through the tap port of the signal splitter and out each other tap port to transmit signals to other terminal devices thus allowing terminal devices to communicate directly with each other to form the signal distribution network.

6-17 (Cancelled)

18. (Previously Amended) The signal distribution network of claim 5, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

19-22. (Cancelled)

23. (Previously Amended) The signal distribution network of claim 5, wherein the signal modulation used by the terminal devices is orthogonal frequency division multiplexing (OFDM) and the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter.

24. (Previously Amended) The signal distribution network of claim 18, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter.

25. (Previously Amended) A broadband local area network using coaxial cable building wiring as a communication channel, the network comprising:

a plurality of terminal devices, each terminal device communicating with other terminal devices using orthogonal frequency division multiplexing (OFDM) modulation, at least one of the terminal devices providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high;

a network of building cables coupled to the plurality of terminal devices; and

a filter having a first and second port, the first port connected to a building point of entry and the second port connected to the plurality of terminal devices via the network of building cables, wherein signals transmitted by any of the terminal devices and received at the second port of the filter are reflected back into the network of building cables in order to create a communication path between the transmitting terminal device and at least one other terminal device coupled to the network of building cables.

26. (Previously Amended) The broadband local area network of claim 25 wherein the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the filter.

27. (Previously Amended) The broadband local area network of claim 25, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the filter.

28. (Previously Amended) The broadband local area network of claim 25 wherein the frequency used for communicating is above the cable television band.

29. (Previously Amended) A broadband local area network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising:

a filter located at the point of entry of the building wiring that reflects network signals originating in the building wiring back into all branches of the building wiring;

at least one signal splitter;

a plurality of terminal devices connected to the wiring branches, each terminal device capable of communicating with other terminal devices the reflected signal path created by the filter, wherein the terminal devices perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals.

30. (Previously Amended) The network of claim 29 wherein the equalization is frequency domain equalization.

31. (Previously Amended) The network of claim 29 wherein the equalization is time domain equalization.

32. (Previously Amended) The network of claim 29 wherein the equalization is adaptive.

33. (Previously Amended) The network of claim 29 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

34. (Previously Amended) The network of claim 32 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

35. (Previously Presented) The network of claim 34 wherein the terminal devices use forward error correction to recover the transmitted signals without errors.

36. (Previously Amended) The broadband local area network of claim 25, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

37. (Previously Amended) The broadband local area network of claim 29, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.